MSFC Environmental Health Services

AIRBORNE FIBER SAMPLING SHEET

Building Number: _____ Location: _____

Operating Description: _____

_____

Pump Location: _____

CALIBRATION DATA

Pump No: _____ Sample Date: _____

Flow rate is 0.5 to 16 liters/minute (NIOSH 7400).
Pre and post readings must not vary more than +/– 10% (inclusive) of each other.

PRE-CALIBRATION

Flow Rate

Calibrator Manufacturer:

_____

Calibrator Serial No:

_____

Average of three trials:

_____

Temp: _____ RH% _____

POST-CALIBRATION

Flow Rate

Calibrator Manufacturer:

_____

Calibrator Serial No:

_____

Average of three trials:

_____

Temp: _____ RH% _____

Average of pre- and post-calibration readings: _____

SAMPLING DATA

Analyst: _____ Date of Reading: _____

Filter Size ☐ 25 mm ☐ 37mm

FILTER ID	TIME ON	TIME OFF	TIME (min)	VOLUME (L)

TOTAL FIBER/FIELD COUNT

	0	1	2	3	4	5	6	7	8	9
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Total Fiber Count: _____ Total Field Count: _____ MFA =0.00785 mm^2

ABBREVIATIONS AND FORMULAS:

DL = Detection Limit in fibers/CC

V = Volume of Air Samples in Liters

FA = Effective Collection Area of Filter in mm^2
(25 mm = 385 37 mm = 855)

MFA = Microscopic Field Area

CALCULATIONS:

Fibers/cc: _____

TWA: _____

DL: _____

$$\text{Fibers/cc} = \frac{\dfrac{\text{(Total Fibers Counted)-(Blank Fibers Counted)}}{\text{(Total Fibers Counted)-(Blank Fields Counted)}} \times \text{(Filter Area)}}{\text{(1000) x (Flow Rate, 1pm) x (Collection Time, min) x (MFA)}}$$

$$DL = \frac{(10/100)\ x(FA)}{(1000)\ x\ (V)\ x\ (MFA)} \qquad F/mm^2 = \frac{(Fibers\text{-}Blank)/(Fields)}{(MFA)} \qquad F/cc = \frac{(Fibers/Fields)}{(Volume)} \times 49.04$$

(for 25mm filter only)

$$TWA = C_1\ T_1 + C_2\ T_2 + C_n\ T_n$$